

## SUGGESTIONS

FOR

*The consideration of his FELLOW-MEMBERS of the COLLEGE COMMITTEE, when they make up the Report concerning the Medical Curriculum of the University, as ordered by the Honourable Town-Council, 27th November 1833, and remitted to them, &c., by JAMES SANDERS, M.D.*

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THE Honourable Council remitted to us, to examine the Curriculum of Medical Studies ordered by our *Senatus Academicus*, and to report, &c.,—an arduous task truly, and, considering the weighty matters which it involves, of no small responsibility. The public good, however, is the supreme law: the attempt must be made.

In the discharge of this duty we cannot take assistance from any of the public establishments; they all differ from one another; not one has a curriculum scientifically constructed.

The appointments to places in the older Universities were conferred through favour; and, in those of later times, the custom has hardly been deviated from.

Generally, when a school commenced, an effort was made, and one or two eminent men procured; if they prospered, soon to them were superadded the creatures of faction, or the needy relations of the influential; afterwards, if such a man as should be there, found admission, his fame seldom effected more than to make cupidity more keen, and patronage more circumspect. When new classes were instituted,

they were always contrived to quadrate with the circumstances of those who were to fill the Professorships, but no where were their number ~~an~~<sup>and</sup> arrangement planned upon any sound principle.

As there is no acknowledged standard, the opinions of men concerning Curricula, evince nothing but discrepancy. Some would have the classes to be few, and others many: some seem to think that a physician should be a locomotive encyclopædia, and others, that his education should not surpass that of an ordinary mechanic. Both extremes are to be avoided: the system, however, which is too confined may do a little good, but that, which is too expansive, is good for nothing.

But how are we to ascertain the just limitation between the too little and the too much? and who is to decide where doctors disagree? Nature will decide; she, when honestly interrogated, never fails to disclose the truth.

In order to arrive at something conclusive upon this question, we state what the intention of the medical profession is, and, adhering to this as a fixed point, we inquire concerning the means by which its object is to be accomplished.

THE INTENTION of the Art of Medicine is to preserve good, and to alleviate and remove bad health.

Its chief subject is the human body: consequently, an intimate knowledge of this body, as it exists during health, and as it changes during disease, is one essential part of study.

To avert, counteract, or arrest those changes which proceed during disease, certain means have been found efficacious; consequently the knowledge of <sup>the</sup> ~~those~~ means, their properties, and how and when they are to be administered, is another essential part.

Hence it is evident that the science of medicine consists of two essential parts.

1. The knowledge of the living economy, and of the changes which it undergoes.

2. The knowledge of the powers which act upon it, or by which it is influenced.

It is plain, then, that all the labours of the student of Medicine must be directed to these two parts.

The living economy exhibits a united structure composed of organs innumerable and multiform, each having its own function, and all co-operating to the conservation of the whole. This structure, and every one of its parts, undergo changes, some consistent with, and others inconsistent with, the continuance of health or preservation of life.

The knowledge of this structure—of the organs individually—and of the manner in which they are united, can only be acquired by dissection;—hence Anatomy.

The knowledge of the functions of the body as a whole, and of each of its organs, can only be acquired by observing the phenomena of the living fabric, and comparing the results with what is to be observed in the cadaver. Here the rational faculties are called into exercise: Anatomy and observation combine to afford explanation;—hence Physiology.

The vital and organic functions become disturbed, and the disturbance terminates in good health, or goes on till life depart. This irregular action is disease, and the peculiar concomitant phenomena are called symptoms. While such action continues, the structure, more or less extensively, suffers deterioration. In this instance also, what occurs during life, compared with what is detected after death, serves to elucidate those changes which are inconsistent with the continuance of health, or the preservation of life;—hence Pathology.

So much for the first essential part of medical study.

The second part comprehends whatever acts upon, or influences the living economy, internally or externally; but

there are certain substances appropriated to the healing art, which are especially employed to avert, counteract, or remove those changes which proceed during disease, and these are derived from all the kingdoms of nature,—animal, vegetable, mineral. Their number is not great, yet their properties are subtle, their preparations must be conducted with tact and delicacy, and their combinations require caution, discrimination, and judgment;—hence the *Materia Medica*.

The principles of their administration demand an intimate acquaintance with their operation or effects, which can neither be acquired by merely seeing or handling them individually, nor conveyed by any power of oral communication. The person, to whom they are to be given, must be carefully examined concerning his state of health, and when given, the consequences must be assiduously watched, and this method of proceeding must not be relaxed during the multifarious commotions and aberrations of the vital and animal functions which characterize or accompany diseases;—hence Clinical Observation, which I pronounce the right hand of medical instruction.

Thus we have Anatomy, Physiology, Pathology, *Materia Medica*, Clinical Medicine.

We have spoken of Anatomy in relation to the sound state, as the basis of Physiology, and in relation to the morbid state, as the basis of Pathology; but it bears a third, and certainly not the least important relation. The body is not only subject to changes in all its parts, in which the articles of the *materia medica*, or constitutional means, may be successfully used, but also to changes which require mechanical and manual aid, and in which, without such aid, the other means would prove nugatory, or even prejudicial; here Medicine and Surgery unite, and afford mutual benefit. For this department the student can attain the necessary acuteness, confidence, dexterity, and self-possession,



only by performing every operation, and in every manner possible, upon the dead body. This is at once the most revolting and the most useful of his labours, and that which claims the utmost vigilance on the part of the teacher;—hence Practical Anatomy.

We have just spoken of Medicine and Surgery as exercised separately; there is also founded in nature yet a third branch, which necessarily comprises both the former in the practice of one person, to whose especial care, from peculiarity of circumstances, belong the diseases of mothers and infants,—the Obstetrical Art, commonly called Midwifery.

During the preceding exposition it must have been evident, that the assiduity of the student would be fruitless, unless accompanied with the continued exercise of his judgment; nor need we spend time to prove, that for commencing the direct study of any profession, the mind must be prepared by a suitable education. Upon what ought to be done to render our primary schools better calculated to prepare youth for the liberal sciences and the liberal arts, it is not our province at present to deliver our sentiments; in the meantime, we may remark, that there is perhaps no profession for which it is so necessary, as for that of medicine, to have the mind enlarged and delighted by the contemplation of the phenomena, and animated with an invincible desire to explore the recesses of nature. Whoever is so destined, should very early be made acquainted with the easily attained elementary principles of Chemistry, Botany, Natural History, Physics; these would unfold to him the mysteries, the miracles, the grandeur of the universe; these would give him an enchanting conception of the workings of those minute atoms of which worlds are composed, as well as of the movements of those majestic orbs which occupy the immensity of space. Thus conducted from nature up to nature's God, he would be thoroughly prepared for the

toilsome investigations which he must now undertake to fit himself for the important duties of his professional life.

Among the scientific entertainments recommended as the best prelude to serious study, were enumerated Chemistry and Botany ; these must be reintroduced, because, besides their bearing upon the philosophy of medicine, they exhibit the very elements and primary conditions of the articles of the *Materia Medica*, and teach the processes by which they are procured, combined, prepared, and adapted to prescription. Chemistry and Botany therefore have very properly received the rank of imperative classes.

Here is completed *the range of acquisition* which the fulfilment of *the intention* of the art of medicine dictates, which must be divided so, that each part may be easily taught, and still preserve its proper relation to the whole ; and these parts will constitute the course of medical studies called by schoolmen *Curriculum Studiorum*.

When a young man enters upon his *Curriculum*, let nothing that is but remotely connected, or merely ornamental, distract him ; for it is expected that by its termination he will be able to take charge of health and life. To this end all his time must be devoted—all the faculties of his soul concentrated—all his habits of thought and action formed and confirmed.

Having shewn the education in kind and extent, which the medical art requires, we shall advert to that which is of equal moment, namely, the qualification of the teachers, and the means by which their energy is to be maintained, or the infirmities of humanity compensated. No man should be appointed who has not already acquired reputation ; and even of those who are rising above their contemporaries, the best should be chosen by fair and open competition, and without regard to any other consideration than the pre-eminence of the candidate.

So far concerning the appointment of the teachers. Let us now see how their efficiency is to be supported, and the evils incident to man provided against, that the school may not suffer.

Emulation alone can perpetuate activity, and secure unquestioned superiority. Exclusive privileges foster indolence and arrogance in the possessor, and remove the palm of glory too far from the reach of the generous aspirant. When hope is extinguished, genius sleeps, and honourable contention is impossible; then avarice, intrigue, knavery, and fraud gain the highest situations; degradation and ruin ensue. Such is the brief story of every University which earned elevation and sunk into contempt. How is this inestimable emulation to be secured? it is to be done, just by encouraging teachers who have no place within the consecrated precincts of the University. If a man patronized by the civil authorities, and invested with a professorship, succumb in competition with one who has no such advantages, depend upon it, the professor is the inferior; and is it not iniquitous to compel a student to spend his money, and his still more precious time to his own injury, and consecutively to that of society? Where the best teachers are, thither will the learners resort: neither compulsion nor fallacious pretension can prevent this result. Is it not obvious then, from every view, that *the course of study* should be *imperative*, but *not the teachers exclusive*; in fine, that the tickets of all well qualified teachers should furnish an equal right to examination and graduation?

Upon this plan, the transpomerian rivals would simultaneously supply every deficiency: neither accident, disease, nor the imbecility of years could impair the character of the school: in short, were the road of preferment open to real merit, there could never be any difficulty in finding such a professor as would be an ornament to the institution.

In this inquiry we have found as subjects with which the candidate for the degree of M. D. must be intimately ac-

quainted, Chemistry, Botany, Anatomy, Practical Anatomy, Physiology, Pathology, Materia Medica, Clinical Medicine, Clinical Surgery, Practice of Midwifery.

REMARKS.—Practical Anatomy must be taught separately from General or Theoretical Anatomy : the former requires much more labour and assiduity than the latter, on the part both of preceptor and pupil.

The Materia Medica embraces the Practical Chemistry of Medicine.

Physiology embraces all the facts furnished by the other sciences, which tend to illustrate or explain the composition, structure, and functions of animals.

The ascertained instruction, under its different correlative branches, which a consummate qualification for the degree of Doctor in Medicine requires, will, by comparison, enable us to judge of the Curriculum or course of study imperatively prescribed by our University.

The Curriculum enjoins :—1. Theory of Physic. 2. Dietetics, Materia Medica, and Pharmacy. 3. Medical Jurisprudence and Police. 4. Chemistry and Chemical Pharmacy. 5. Surgery. 6. Practice of Physic. 7. Anatomy and Physiology. 8. General Pathology. 9. Theory and Practice of Midwifery. 10. Clinical Medicine. 11. Clinical Surgery. 12. Botany. 13. Natural History. 14. Practical Anatomy.

The denominations of the classes are copied from the programme published by order of the SENATUS ACADEMICUS, at the commencement of each winter session, or *annus medicus*.

REMARKS.—1. Class of *Theory of Physic*, also called of *Physiology and Institutes of Medicine*, is intended to comprehend, and does, if properly conducted, comprehend all the established data which can contribute to the expla-



nation of the animal economy ; therefore Class 13, Natural History, is quite as superfluous as Natural Philosophy or Astronomy would be.

3. Class of Medical Jurisprudence and Police, chiefly teaches those effects apparent in the body, which are produced by means employed to destroy, or which have intentionally destroyed, human life. Nothing can be brought forward in this class which is not of necessity exposed in much greater amplitude, both analytically and synthetically, in the other classes ; this class, therefore, is not only superfluous, but must be intolerably tedious to any medical student who has been moderately attentive. At the same time, it seems to me, that this course ought to be imperative upon students of law.

8. Class of General Pathology, in a practical sense, signifies neither more nor less than the Practice of Physic. To have two classes for precisely the same thing is quite unnecessary, and to give them different names is ridiculous. The modern appellation is borrowed from the French, who call *Pathologie Interne* what we call Practice of Physic, and *Pathologie Externe* what we call Surgery. But even the most prodigal and thoughtless would think it hard to be compelled to pay three or four guineas merely for the name of a class.

11. Class of Clinical Surgery. To him who has attended this and the 6. Practice of Physic, attendance upon 5. Surgery is altogether unnecessary.

Hence we infer that it is to frustrate the very design of forming a thoroughly educated practical physician, to add even one class to the following:—1. Physiology. 2. Materia Medica. 3. Pathology. 4. Anatomy. 5. Practical Anatomy. 6. Chemistry. 7. Botany. 8. Midwifery. 9. Clinical Medicine. 10. Clinical Surgery.

To the *Curriculum Studiorum Medicinæ*, or Course of Medical Studies, the University of Edinburgh has as-

signed the period of four years ; and in that here proposed there is occupation more than abundant for four years, unless the present arrangement be improved. Some branches are best suited for winter, and others for summer. In winter the time of the student should be, as much as possible, devoted to the hospital, to the dissecting room, and to the closet. Thus, facts pathological and practical will be imprinted on his memory, while his ability in distinguishing and treating maladies, will augment in rapid progression. Six months of such application should be followed by some degree of relaxation ; and fortunately, the studies best suited for the ensuing months, will answer this purpose admirably. We would therefore have those classes selected for the first part of the medical year, in which subjects are treated, which correspond with the seasons of winter and spring, and for the latter part of it, those which correspond with the season of summer. In this way the attention will be kept up by a variety equally instructive and amusing, and the health, both bodily and mental, will be consulted.

The classes best suited to the cold seasons are, 1. General Anatomy. 2. Practical Anatomy. 3. Pathology. 4. Midwifery. 5. Clinical Medicine. 6. Clinical Surgery.

The classes best suited to the summer are, 1. Botany. 2. Chemistry. 3. Materia Medica. 4. Physiology.

According to this division, the student, instead of posting from class-room to class-room without a single moment for reflection, will have time not only to attend the prelections of his teachers, but the cases in the hospital, during those months when diseases are most violent, numerous, various, and interesting, and he may even manage to have leisure to write and meditate. Let him not forget the advice which he received from Virgil, " Do not thou lay down thine eyes for sweet sleep, before thou hast recounted all the actions of the long day."

The summer classes will allow time for the enjoyment of open air and of exercise, and the unoccupied autumn will restore that vigor of body and alacritude of spirit, which will bear him up against the uninterrupted exertions of the winter and spring.

What is called the winter session occupies six months; that of summer, no more than three : but each summer class should be attended at least two seasons, which will in every respect be better for the student than six successive months of attendance on any one of the subjects allotted to the latter portion of the medical year.

The privileges of the hospital would be invaluable, and the Clinical Lectures should not be neglected ; but much improvement must be made, before our Infirmary can be attractive to those who are anxious to learn.

Most unaccountably, the lock-up wards have been suppressed, which both greatly endangers our population, and deprives students of the opportunity of becoming acquainted with a genus of noxious and infectious diseases, without the knowledge of which, they will never be even safe practitioners.

These wards ought to be restored, and part of what besides ought to be done, appears in the following extract of a letter which I lately addressed to the Managers of the Royal Infirmary.

“ The next subject that will demand your most serious consideration is the mutual relation or connexion which ought to subsist between a medical hospital and a medical school. Besides being a receptacle for patients, the Infirmary is an indispensable auxiliary to the University, or, to speak definitely, it is a constituent part of our Medical School. In its wards young men must acquire that practical experience and skill which concern their own reputation, and, what is infinitely more important, the lives of their fellow-creatures ; hence it is obvious that every man ap-

pointed either as a physician or surgeon should be able both to practise and to teach, that he may instruct those who go the rounds along with him respecting the nature of every case, and the object of every prescription, and at stated times explain candidly and fully to them assembled, the motives which govern his procedure. No other than the man who conducts the treatment can perform this duty ; the arrangements hitherto acted on are of a very different character ; and this is the cause that no tale thrice told was ever less instructive or more soporific than a clinical lecture generally is.

“ To accomplish the desired end, each physician and surgeon of the Infirmary must be an authorized teacher, and the certified attendance on his lectures must qualify, and be admitted accordingly by the examiners, either of the University, or of the Royal College of Surgeons.

“ But it would not be wise to bestow these privileges, unless the system of direction were remodelled, since, as things are, the situation of physician or surgeon rendered profitable, would soon be converted into part of the patrimonial estate of some provident personage.”

It appears to us that the rate of fees should be taken under consideration. Nothing can be more clear than that the fee for the Summer Course of three months should not be so high as that of the Winter Course of six months.

In the year 1812, the fee of each medical class was increased from three to four guineas, upon the plea that all the articles of life were then of an exorbitant price ; but now, from the fall in the value of property of every kind, no reason can be urged why the fees should not be accommodated to the change of circumstances.

We would advise, that for the course of six months, the fee be henceforth £3 : 3s., and for the course of three months, £2 : 2s. ; and that the apparently trifling, though really annoying surcharges made by the professors should be entirely prohibited.



Let us, in concluding, return to the Royal Infirmary. This should be the fountain of practical information, as yet too little valued, which complaint I have frequently made, and still repeat. But avarice here also overreached its object. Under plausible pretences the fees were increased, and instead of inducement being held out to young men to accustom themselves to the ever-varying aspects of disease in this place, where, from year to year the objects of their solicitude and instruction were to be found, the door was more than half shut against them, by new regulations with respect to attendance, and new demands upon their scanty funds. Formerly the fee was £3 : 3s. the first year, £2 : 2s. the second year, and £1 : 1s. the third year, after which admission was free. To this good old regulation the Managers of the Royal Infirmary must recur, if they wish either to improve the establishment committed to their charge, or to assist in renovating the destiny of our School of Medicine.

We have dispassionately and impartially discussed the subject of the Curriculum, and proposed such alterations in the present system, as are calculated to obliterate the errors of the past, and to ensure prosperity for the future. If the suggestions above given be acted upon, Edinburgh will no longer send forth hypothetical wranglers, but well endowed Physicians, the honour of their teachers, the pride of their country, and the benefactors of mankind.

